Health-Based Advisory Levels for Homeland Security Use

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The Homeland Security Presidential Directive No.5 requires Federal agencies to develop national emergency preparedness for terrorist incidents or natural disasters. However, for many chemical and biological agents, health-based exposure guidelines are not available to identify appropriate levels for re-occupation of buildings or reuse of drinking water. Hence, the US EPA National Homeland Security Research Center (NHSRC), in collaboration with the Department of Energy Argonne National Laboratory and Oak Ridge National Laboratory, are developing health-based provisional advisory levels (PALs). PALs are threshold exposure limits for the general public, including susceptible and sensitive subpopulations. They can be applied for national emergency programs, community planning, and public health protection. Specifically, they are applicable for establishing health-based criteria for re-entry into buildings, reuse of drinking water, and cleanup of contaminated facilities. Scientific judgment and credible data are used to identify appropriate toxicity endpoints for establishing the point of departure (POD) for developing PAL values. They are derived for acute (24 hours), short-term (1–30 days), and longer-term (30 days to 2 years) oral and inhalation exposures to industrial chemicals, biologicals, radionuclides, and warfare agents. The three levels (PAL1, PAL2, and PAL3) for each exposure period are distinguished by the degree of severity of toxic effects. Draft PAL values are evaluated by an EPA working group, and by independent multidisciplinary expert panels to ensure credibility and acceptance in the scientific community.

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